SUBJECT REQUIREMENT	LOCATION IN APPLICATION COMMENTS
PART D PROCESS INFORMATION This part should include details of (1) the storage and/or treatment process(s), and (2) each hazardous waste unit to be utilized for these processes. Provide the technical design calculations, drawings and specifications for every process and unit. All design information submitted must be certified by a professional engineer registered in the Commonwealth of Kentucky. **D-3 <u>Waste Piles</u> 401 KAR 34:210 and 401 KAR 38:180** **D-3a <u>List of Wastes</u>** The application must provide a list of all hazardous wastes to be placed or previously placed in waste piles. Information must include: • Analytical and sampling techniques • Information of ignitability, compatibility, corrosivity and reactivity • 401 KAR 31:170 constituents **D-3b <u>Exemptions</u>** **D-3b(1) <u>Protected Waste Piles</u> 401 KAR 34:210 Section 1(3)** A waste pile that is inside or under a structure that provides protection from precipitation so that neither leachate nor run-off is generated is not subject to the requirements of 34:210 Section 2 and 34:060, if the applicant can demonstrate that: • Liquids or materials containing free liquids are not placed in the pile • The pile is protected from surface water run-on by the structure or in some other manner • The pile is designed and operated to control dispersal of the waste by wind by means other than wetting, and • The pile will not generate leachate through decomposition or other reactions. **D-3b(2) <u>GroundWater Monitoring Exemptions for Piles Which Are Engineered Structures</u> 401 KAR 34:060 Section 1(2) and 38:180 Section 2(2)** If an exemption from the 401 KAR 34:060 groundwater monitoring requirements is sought, demonstrate the following: • The unit for which the exemption is sought is an engineered structure • No liquid waste or waste containing free liquids will be received by or contained in the pile • Liquids, precipitation, and other run-on and run-off will be excluded from the pile	

SUBJECT REQUIREMENT	LOCATION IN APPLICATION COMMENTS

• A containment system with both inner and outer layer will enclose the waste
• A leak detection system is built into each containment layer
• The means of ensuring continuing operation and maintenance of the leak detection systems during the active life of the unit and the closure and post-closure care periods
• The unit will not allow hazardous constituents to migrate beyond the outer layer of the containment system prior to the end of the post-closure care period (within a reasonable degree of certainty)
 	
D-3b(3) <u>Liner Exemption from Design and Operation Requirements of 34:210 Section 2(2)</u>
 	
The owner or operator may be exempted from the requirements of 34:210 Section 2(1) if the Cabinet finds, based on a demonstration/exemption request by the owner/operator, that alternate design and operating practices together with location characteristics, will prevent the migration of any hazardous constituents (see Section 4 of 401 KAR 34:060) into the groundwater or surface water at any future time.
 	
Information to be submitted includes:
• Nature and quantity of wastes
• Alternative design and operation plans
• Hydrogeologic setting
  • Attenuative capacity
  • Thickness of liners
  • Thickness of soils between the waste pile and seasonal groundwater (water table) or surface water elevations
  • Other factors which would influence the quantity, quality, and mobility of leachate produced
 	
D-3c <u>Liner System Requirements</u>
 	
Unless a waiver of the liner requirements is requested or unless the waste pile qualifies as an existing portion, a liner is required.
 	
D-3c(1) <u>Liner Description</u> 401 KAR 34:210 Section 2(1)(a)
 	
If a liner is required, the application must provide detailed plans and an engineering report describing the liner system. The application must demonstrate that migration of waste out of the liner system will be prevented. The following information is needed:
• Material of construction
• Chemical properties
• Physical strength
• Thickness
  • Synthetic
  • Natural	

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• Liner system/waste compatibility testing 401 KAR 34:210 Section 2(1)(b)1.a.
• Liner installation procedures 401 KAR 34:210 Section 5(1)
• Liner inspection procedures 401 KAR 34:210 Section 4
• Subsurface exploration data
• Foundation design 401 KAR 34:210 Section 2(1)(a)2
• Size/Area covered 401 KAR 34:210 Section 2(1)(a)3
• Vendor and manufacturer (if synthetic)
• How the system's integrity will be maintained against: [401 KAR 34:210 Section 2(1)(a)1].
  • Internal and external pressure gradients including static head, settlement, compression, uplift
  • Contact with waste/leachate
  • Climatic conditions
  • Installation stresses
  • Daily operational stresses
 	
D-3d **<u>Leachate Detection, Collection, and Removal System Requirements</u> 401 KAR 34:210 Section 2(1)(b)**
 	
Unless an exemption from leachate detection, collection, and removal system requirements is requested, the application must include detailed plans and an engineering report describing:
• How the system will be designed and operated to ensure that no more than 30 cm (one foot) of leachate is above the liner
• Materials of construction
• Chemical resistance to waste/leachate
• Provisions to prevent clogging
• Load-bearing strength and the ability of the system to withstand the pressures exerted by overlying waste, waste cover materials and equipment used at the waste pile
• Methods to be employed to install the leachate collection and detection system
• Material of construction
• Chemical properties
• Physical strength
• Thickness
  • Synthetic
  • Natural
• Liner system/waste compatibility testing 401 KAR 34:210 Section 2(1)(b)1.a.
• Liner installation procedures 401 KAR 34:210 Section 5(1)
• Liner inspection procedures 401 KAR 34:210 Section 4
• Subsurface exploration data
• Foundation design 401 KAR 34:210 Section 2(1)(a)2
• Size/Area covered 401 KAR 34:210 Section 2(1)(a)3
• Liner location relative to the seasonal high water table
• Vendor and manufacturer (if synthetic)
• How the system's integrity will be maintained against: [401 KAR 34:210 Section 2(1)(a)1].	

SUBJECT REQUIREMENT	LOCATION IN APPLICATION COMMENTS
• Internal and external pressure gradients including static head, settlement, compression, uplift • Contact with waste/leachate • Climatic conditions • Installation stresses • Daily operational stresses **D-3e <u>Control of Run-on and Run-Off</u> 401 KAR 34:210 Sections 2(3) and 2(4)** The application must include detailed plans and an engineering report describing the system(s) used to prevent <u>run-on</u> from the peak discharge of a 25-year storm and to prevent <u>run-off</u> from the volume resulting from a 24-hour, 25-year storm. Information to be submitted may include: • Sizing, design, and installation of system(s), i.e., piles, tanks, surface impoundments, pumps, wet wells, etc. • Maintenance procedures to ensure long-term structural integrity **D-3f <u>Units Associated with Run-On, and Run-Off Control Systems</u> 401 KAR 38:180 Section 2(3)(d) and 34:210 Section 2(5)** Detailed plans and an engineering report describing: • Collection and holding facilities (e.g., tanks, basins) associated with run-on and run-off control systems • How the holding facilities will be managed and operated to maintain design capacity after storms **D-3g <u>Particulate Control</u> 401 KAR 38:180 Section 2(3)(e) and 34:210 Section 2(6)** The application must demonstrate that the waste pile is managed in such a manner that wind dispersal of wastes is controlled. **D-3h <u>Additional Information Required If Treatment is Carried Out on or in the Pile</u> 401 KAR 38:180 Section 2(5)** If treatment occurs in or on the waste pile the application must include: • Details of the process including rate of decomposition, heat of reaction, controls, etc. • Equipment used • Nature, quality and quantity of the residuals • Monitoring equipment (temperature, pH, explosimeter)	

SUBJECT REQUIREMENT	LOCATION IN APPLICATION COMMENTS
D-3i **Special Requirements for Hazardous Wastes F020, F021, F022, F023, F026 and F027 401 KAR 34:210 Section 9 and 38:180 Section 2(9)** Hazardous waste numbers F020, F021, F022, F023, F026 and F027 (chlorinated dioxins, chlorinated dibenzofurans, and chlorinated phenols) must not be placed in waste piles that are not enclosed unless the waste pile is operated in accordance with a management plan for these wastes that is approved by the Cabinet pursuant to 401 KAR 34:210 Section 9, and in accordance with all other applicable requirements of Chapter 34. Factors to be considered are: • The volume, physical, and chemical characteristics of the wastes, including their potential to migrate through soil or to escape into the atmosphere, • The attenuative properties of underlying and surrounding soils or other materials, • Mobilizing properties of other materials co-disposed with these wastes, • Effectiveness of additional treatment, design or monitoring techniques. **D-3j** **Land Disposal Restrictions 401 KAR 38:090 Section 2(23)** • Documentation of compliance with 401 KAR Chapter 37 • A copy of the notices of approval for any extensions or petitions granted under 401 KAR 37:010	